

# Product Information

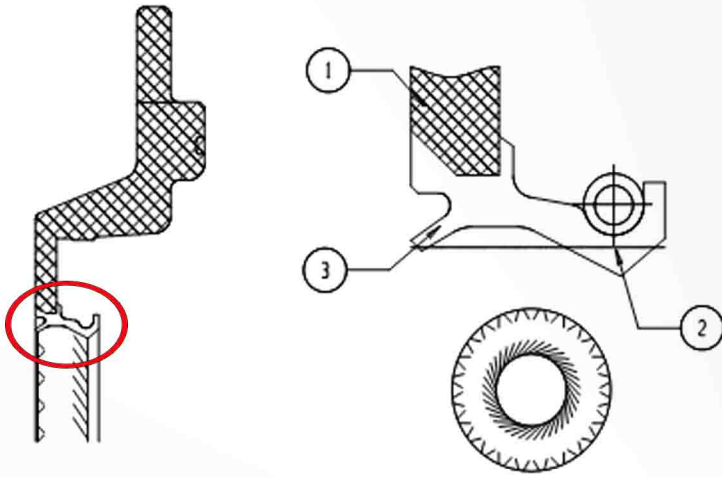
## NAK Crankshaft Seals - CSS Type



ISO-9001/14001  
ISO/TS-16949  
OHSAS-18001



*World Class Brand World Class Manufacturing*



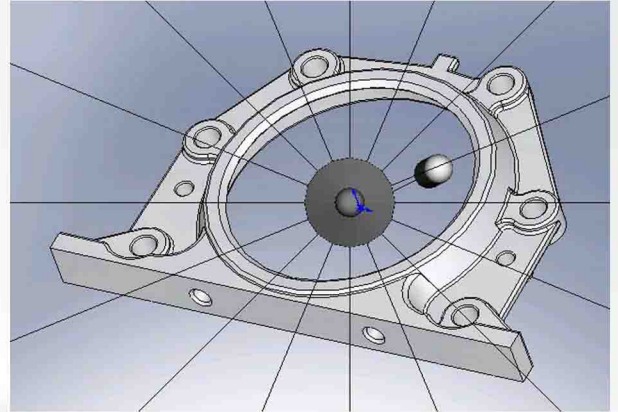
1. Aluminum die casting
2. Sealing lip
3. Dust lip

## Material

Rubber : AEM, FKM, PTFE

Case : Aluminum alloy, SAE 1008

Spring : SAE 1070

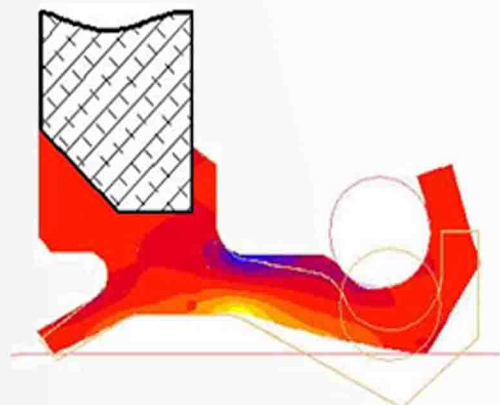
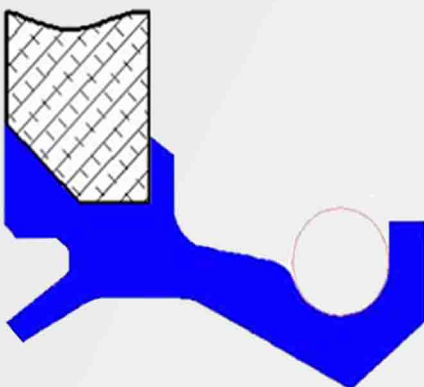


## Features

NAK rear crankshaft seal is a combination of rotary seal, aluminum die cast retainer and dowel pins to position the retainer accurately to the engine block. The helix structure on main lip can help pumping the oil from air-side to oil-side that will reduce fluid leakage, lip friction and increase lubrication to extend seal life.

## Technical Information

NAK utilizes particular CAE (Computer-Aided Engineering) programs, such as Finite Element Analysis (FEA) and Seal CAD (SCAD) system to ensure high performance design. The FEA conducts a series of computational procedures involving applied spring forces, and the properties of the rubber to get the sealing lip deformation, strains and stresses which are caused by installing on the engine crankshaft.

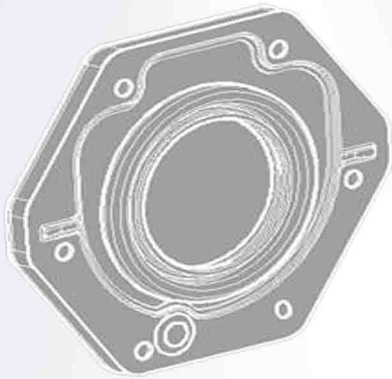




# Advantages

## 1. Simplified modular assembly

The rear crankshaft seal module is a complete combination of seal, cast and pins. Simplified module leads to easy installation and assembly time saving.

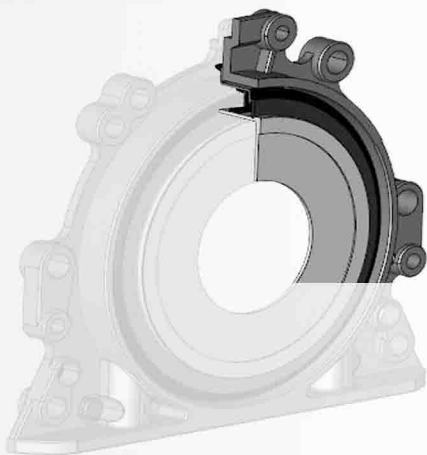


## 2. Cost reduction

Sealing module not only simplifies manufacturing process but also leads to total cost savings of individual parts, operations, logistics, warehousing and etc.

## 3. Eliminating potential leakage

The possibility of static leakage exists in the matching surface of each element. The simplified modular assembly decreases the problems of static sealing failure.

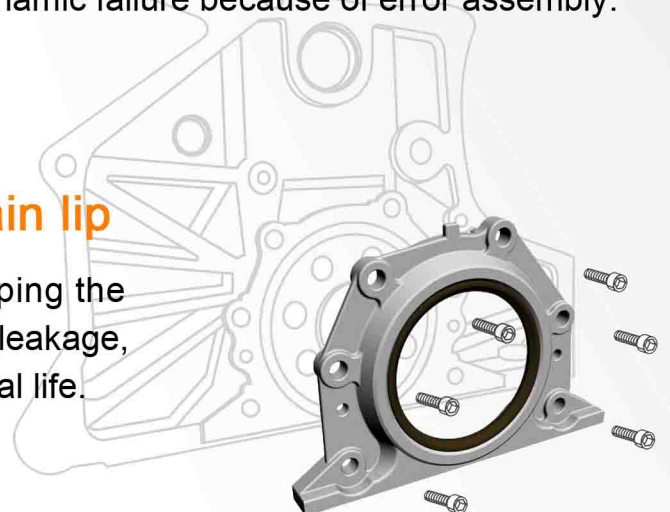


## 4. Rapidly installation and position

The dowel pin design rapidly positions the seal into the right assembling place. The positions of the seal and shaft are quite correct relative to the dowels and location holes in the engine block ensuring correct functioning. It reduces static or dynamic failure because of error assembly.

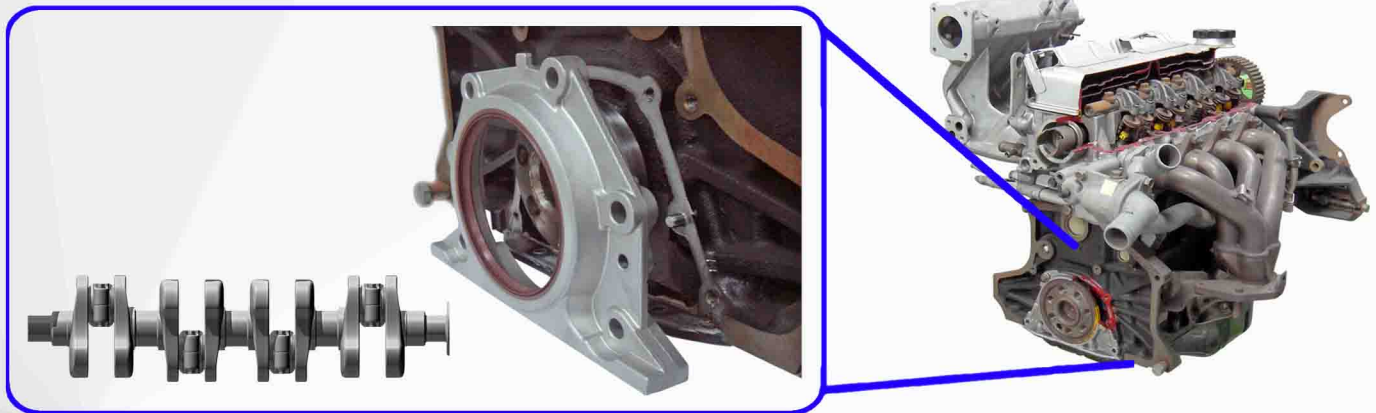
## 5. Hydrodynamic aid design on main lip

The helix structure on main lip can help pumping the oil from air-side to oil-side that will reduce fluid leakage, lip friction and increase lubrication to extend seal life.



# Application

NAK crankshaft seal module is applied to the cylinder block of an internal combustion engine in the automotive field.



Drawing	Drawing No.	NAK Type	OEM No.	Application	
	RD081-1A	CSS1L12	12279-2W201	NISSAN	TERRANO · LGURUS, WD21, R50, JR50
	48800	CSS1L12	12279-43G05	NISSAN	ATLAS, DATSUN TRUCK
	48801	CSS2L9	12296-31U20	NISSAN	LEOPARD · J.FERIE, STAGEA, SKYLINE, CIMA Y31, CEFIRO(FWD) A32, W32, CA33, TEANA J31
	49148	CSS3L2	028 103 171 028 103 171B 028 103 171K	AUDI / VW	A2, A3, A4, A6, Leon, Toledo, Fabia, Caddy, Lupo, Sharan, TDI, Bora, Golf, Beetle, Passat, Polo
	49288	CSS3L2	06A 103 171A	AUDI / VW	A2, A3, A4, A6, Leon, Toledo, Fabia, Caddy, Lupo, Sharan, TDI, Bora, Golf, Beetle, Passat, Polo
	49621	CSS4L	40102483 504059361 7701044092 99468744 99447458	IVECO / RENAULT / FIAT	DAILY, BOXER, DUCATO 2.5 / 2.8
	50159	CSS5R9	40102313 500315684 504059359 7701044093 98464673	IVECO / RENAULT / FIAT	DAILY, BOXER, DUCATO 2.5 / 2.8

More crankshaft seals are coming soon, please contact with us for more details.





# Subsidiary map

## Existing subsidiaries worldwide

● Factory

● Service office & warehouse



### Taiwan (NAK Headquarters)

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### China

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